

# **The future of allied air power**

*The Royal Australian Air Force*

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## **Abstract**

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This Scientific Report is the second in a series of reports whose purpose is to inform discussions of capability and concept development within both the RCAF and CAF, as well as providing an important input into Canadian policy development. The methodology adopted begins with an analysis of the policy and supporting strategy framework of, in this case, Australia to develop an understanding of the direction being given to its military on the areas of the world and threats against which it is to prepare. On the basis of this understanding of the key tenets of Australian strategic thinking it is possible to identify those concepts and capabilities being developed to prepare the Royal Australian Air Force (RAAF) to meet those threats. The findings of this analysis are that Australia will, for its own geostrategic reasons, continue to develop the capabilities necessary to ensure it remains an indispensable ally to the world's dominant naval and air power. While at the political level a full embracing of the US Joint Concept for Access and Maneuver in the Global Commons (JAM-GC) may not be in Australia's interests, the capabilities it is now developing and its geography will make it an indispensable ally to US strategy in the Southwest Pacific. The institutional change those capabilities are forcing on the RAAF are an example of what the RCAF and CAF need to do to define a meaningful role for air and joint operations moving forward. Thus, this analysis of Australian experience could serve a range of functions within the Department of National Defence and the CAF, from focusing RCAF capability and concept development through to informing joint force and policy development.

## **Significance to defence and security**

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This Scientific Report is the second in a larger analytical effort that when completed will have a significant impact on the policy development community, and will help to provide a focus to RCAF and CAF concept and force development. Through the development of a more comprehensive understanding of the orientation, threat perception, and capability and concept development efforts of Canada's key allies this analytical effort will identify areas that RCAF and CAF concept and force development communities need to explore to ensure the CAF maintains its position as a trusted and capable ally. Moreover, the general analytical approach developed in this report, of creating and using an understanding of 'future warfare' as the main methodology for force development across the services, is recommended for wider use.

## Résumé

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Le présent rapport scientifique est le deuxième d'une série de rapports qui ont pour but d'éclairer les discussions sur le développement de capacités et de concepts au sein de l'Aviation royale canadienne (ARC) et des Forces armées canadiennes (FAC) ainsi que de présenter des renseignements importants pour le développement de politiques canadiennes. La méthodologie adoptée a d'abord consisté à procéder dans le présent cas à une analyse de la politique et du cadre de la stratégie d'appui de l'Australie en vue d'acquérir une compréhension de l'orientation que ce pays donne à ses forces armées quant aux régions de la planète et aux menaces contre lesquelles elles doivent se préparer. En fonction de cette compréhension des principes clés de la pensée stratégique australienne, il est possible de cerner les concepts et les capacités développés en vue de préparer la Force aérienne royale australienne (RAAF) à faire face à ces menaces. Cette analyse permet de conclure que l'Australie continuera, pour ses propres raisons géostratégiques, de développer les capacités dont elle a besoin pour s'assurer de demeurer un allié indispensable de la puissance navale et aérienne dominante du monde. Bien que, du point de vue politique, l'Australie n'ait pas intérêt à épouser pleinement le Joint Concept for Access and Maneuver in the Global Commons (JAM-GC) des États-Unis, les capacités qu'elle est à développer et sa situation géographique en feront un allié indispensable des États-Unis pour ce qui est de leur stratégie dans le Sud-Ouest du Pacifique. Le changement institutionnel que ces capacités poussent la RAAF à adopter illustre les mesures que l'ARC et les FAC doivent prendre pour définir un rôle qui soit pertinent et permette aux opérations aériennes et interarmées d'aller de l'avant. Ainsi, l'analyse de l'expérience de l'Australie pourrait être utile dans le cadre d'un vaste éventail de fonctions au sein du ministère de la Défense nationale et des FAC, qu'il s'agisse d'orienter le développement des capacités et des concepts de l'ARC, de guider le développement des forces interarmées ou d'éclairer l'élaboration des politiques.

## Importance pour la défense et la sécurité

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Le présent rapport scientifique est le deuxième à être établi dans le cadre d'un grand projet d'analyse qui, une fois mené à terme, aura une incidence importante sur la communauté chargée d'élaborer les politiques et aidera à orienter le développement des forces et des concepts de l'ARC et des FAC. En acquérant une compréhension exhaustive de l'orientation, de la perception des menaces et des efforts de développement de capacités et de concepts des alliés clés du Canada, ce projet d'analyse permettra de cerner les domaines que les communautés responsables du développement des concepts et des forces de l'ARC et des FAC doivent explorer pour que les FAC conservent leur statut d'allié digne de confiance et compétent. De plus, il est recommandé d'utiliser à plus grande échelle la démarche analytique générale mise au point pour le présent rapport et ayant consisté à acquérir et à utiliser une compréhension de la « guerre de l'avenir » comme principale méthodologie de développement des forces dans les trois armées.

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# 1 Introduction

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The primary purpose of this paper, which is part of a larger analytical effort seeking to develop a comprehensive understanding of how Canada's key allies envisage future warfare and the direction they are taking in concept and capability development, is to assist in focusing the Canadian Forces Aerospace Warfare Centre's (CFAWC) Concept Development and Experimentation (CD&E) efforts. The method used in this analysis involves looking first at the current driving forces behind Australian strategic thinking in order to set an appropriate context around which to examine the path being charted by the Royal Australian Air Force (RAAF) in terms of major capability investment and concept development over roughly the next ten years. This appreciation of the Australian approach to dealing with the United States (US), its policy regarding the military rise of China and the increasing importance of the Southwest Pacific Theatre of Operations (SWPTO), and the RAAF's efforts to find a meaningful role in the evolution of American concepts of air and joint warfare will offer useful insights for Royal Canadian Air Force (RCAF) capability and concept development. This is not to suggest that the RCAF will follow exactly the path of any of its key allies and coalition partners, the US included, merely that such an understanding would assist greatly in setting its own heading.

It is important to note that while some authors have suggested that Canada and Australia are 'strategic cousins'<sup>1</sup>, sharing a colonial heritage and long history of operational experience, the two nations occupy completely different 'neighbourhoods' and this reality shapes somewhat different perceptions of potential threats and methods with which to respond. Australia occupies a particularly dynamic neighbourhood which often requires unilateral operations in support of regional stability. An example of this can be seen in their operations in Timor Leste to restore stability in a neighbouring country.<sup>2</sup> That being said, the Canadian government recently has taken a renewed interest in the Southwest Pacific, as has the US. While the United States Air Force (USAF) will always serve as Canada's principal coalition partner, and through the North American Aerospace Defence Command (NORAD) a partner in continental aerospace defence, there is the possibility that coalitions involving Canada and Australia could be formed in response to a contingency where the US is not the coalition lead. While unlikely, and even where so the US likely would provide critical enabling capabilities, an understanding of RAAF capability investment and concept development is of value to the RCAF in focusing its own efforts. Even an understanding of how Australia is responding to increased US interest and presence in the region offers potential lessons relevant to the Canadian context.

This more comprehensive awareness of the direction a key Canadian ally is taking also could serve as an important input into policy formulation discussions, which form the first crucial step in the preparation of a coherent national response to the threats facing the nation and its interests. How nations conceive of these threats in the context of their unique geostrategic imperatives is an important first-step in determining their orientation in terms of policy formulation and strategy development, the latter identifying in detail how resources will be applied and, *inter alia*, how military capabilities and concepts will be developed. Put simply, in order to understand the

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<sup>1</sup> John C. Blaxland, *Strategic Cousins: Australian and Canadian Expeditionary Forces and the British and American Empires* (Kingston ON: McGill-Queen's University Press, 2006), *passim*.

<sup>2</sup> Gary Waters, "Pressing Issues for the 2015 Defence White Paper", accessed 30 March 2015, <http://www.kokodafoundation.org/Resources/Documents/DP01WhitePaperReportWeb.pdf>.

Australian position, and thus the direction its air force is taking, it is necessary to have a better understanding of its conception of the threats faced, and of its corresponding policy and strategy formulation.



## 2 Australian geostrategic imperatives

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In geopolitics, as in real estate, the neighbourhood matters. The region of the world in which a nation finds itself will shape its national experience and this, in turn, will develop its strategic culture.<sup>3</sup> In this regard some countries are fortunate and others less so, but each nation must develop policy responses using the full range of tools at their disposal—from diplomacy to military power—in accordance with regional dynamics if it is to succeed in attaining its goals. In so doing, nations are guided by a set of imperatives, often determined by geography, national ambition, and relative power, that serve to focus their perception of the threats to critical interests. Thus, these geostrategic imperatives serve as intuitive guiding principles which transcend political ideology or individual proclivities. It is important to note that these imperatives do not determine all actions or decisions, only that geography and regional dynamics can influence strongly the courses of action available.

Australia is one of the wealthiest and most geographically isolated countries in the world. Its gross domestic product ranked it in the top ten nations in 2013, much of that due to a favourable trade relationship with China.<sup>4</sup> It occupies a country which is also a continent, one difficult to invade and rarely threatened directly.<sup>5</sup> One would expect a nation in such circumstances to remain militarily unengaged. Yet since the early 20<sup>th</sup> century Australia has, irrespective of the government's ideological alignment, been involved in one war or another for roughly one-third of the time since the establishment of the Commonwealth of Australia in 1901. It has fought as part of the British Empire in the Anglo-Boer War and both World Wars, and later in every major war involving the US including the Korean and Vietnam conflicts and those in both Iraq and Afghanistan. This begs the question why, for a country that is both difficult to invade and geographically isolated, does it find itself participating in so many conflicts? Answering this question will help to identify the nation's geostrategic imperatives.

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<sup>3</sup> For scholarship on strategic culture see Jack L. Snyder, "The Soviet Strategic Culture: Implications for Limited Nuclear Operations" (Santa Monica: RAND, 1977); Colin S. Gray, "Comparative Strategic Culture" *Parameters* (Winter 1984); Jeffrey S. Lantis, "Strategic Culture and National Security Policy," *International Studies Review*, Vol. 4 No. 3 (2003); Michael Evans, "The Tyranny of Dissonance: Australia's Strategic Culture and Way of War 1901-2005" Land Warfare Studies Centre, Study Paper No. 306, February 2005; Ken Booth, *Strategy and Ethnocentrism* (London: Croom, Helm, 1979); Alastair Iain Johnston, "Thinking about Strategic Culture," *International Security*, Vol. 19 No. 4 (1995); Bruce R. Vaughn, "Australia's Strategic Identity Post-September 11 in Context: Implications for the War Against Terror in Southeast Asia" *Contemporary Southeast Asia* Vol. 26, No. 1 (2004); Adrian Hyde-Price, "European Security, Strategic Culture, and the Use of Force" *European Security*, Vol. 13 No. 4 (2004); Anja Dalgaard-Nielsen, "The Test of Strategic Culture: Germany, Pacifism and Pre-emptive Strikes" *Security Dialogue*, Vol. 36 No. 3 (November 2005); Major Kimberly A. Crider, "Strategic Implications of Culture: Historical Analysis of China's Culture and Implications for United States Policy," Air Command and Staff College, *Wright Flyer* No. 8 (September 1999); Jack Snyder, "Anarchy and Culture: Insights from the Anthropology of War" *International Organization*, 2003.

<sup>4</sup> Ivan Kolesnikov, "GDP per Capita Ranking 2013" accessed 31 March 2015, <http://knoema.com/sijweyg/gdp-per-capita-ranking-2013-data-and-charts>; also see Gabriele Abbondanza, *The Geopolitics of Australia in the New Millennium: The Asia-Pacific Context* (Rome: Aracne, 2013), 94.

<sup>5</sup> Government of Australia Department of Defence, "The Australian Approach to Warfare" (Canberra: Public Affairs & Corporate Communication, 2002), 11, accessed 7 April 2015, <http://www.defence.gov.au/publications/docs/taatw.pdf>.

First, being isolated and difficult to invade does not ensure a country's security or economic prosperity. The simple fact is that Australia, like Canada, is rich in natural resources and has a relatively small population; both conditions have made it an exporter of raw materials and an importer of manufactured goods. To survive it must trade competitively—its first geostrategic imperative—and the vast majority of those goods must travel by sea. Australia has never been in the position to control the sea-lanes even in its own region, and thus has been forced to court the support of those maritime powers that can assist it in doing so—arguably its main geostrategic imperative.<sup>6</sup> In its early years, that dominant naval power was Great Britain and the Royal Navy; more recently, that role has fallen to the US and the Australians owe as much for their prosperity and security to the power of the United States Navy (USN) and the USAF as to any other institutions. This reality guides Australian policy decisions and their resulting strategy. Nonetheless, creating the kind of reliance on Australia which the dominant power must have in order to ensure it will support Australia in securing those sea-lanes has proven difficult and costly. But the costs of failing to do so would be even greater and more difficult to endure, as Australia's economic power is not as secure and guaranteed as it might seem at first glance.

The geostrategic imperative of needing to secure the patronage of the dominant naval, and later naval and air, power has been evident throughout Australia's existence. Its involvement in the Anglo-Boer War (1899–1902) was due in part to Australia's colonial status, and thus when Britain was at war so too was Australia, but partly on the need to maintain Britain as a customer for its wool exports and mainly as a guarantor of its trade lines.<sup>7</sup> Australia's participation in World War One was in part about ensuring the dependence of Britain, and in the Second World War to protect itself from an aggressive Japanese Empire and its intent to control the Pacific and possibly Indian oceans. In the latter instance it began to be a trusted partner of the US in its efforts against Japan, something valuable as Britain was replaced by the US as the dominant power. This goes a long way towards explaining Australia's involvement in American conflicts of the following decades during the Cold War—those in Korea and Vietnam—both of which carried a high price. While those two conflicts did occur in Australia's near abroad, especially the war in Vietnam, the Australian participation in that conflict was in response to requests from US president Lyndon Johnson.<sup>8</sup> This is not to say that Australia would not have found itself in Vietnam for other reasons, given the American perception at the time that Australian officials were more hawkish than their American colleagues, with President Johnson's National Security

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<sup>6</sup> The first author to note this geostrategic imperative was Coral Bell, *Dependent Ally: a study in Australian foreign policy* (Oxford: Oxford University Press, 1988).

<sup>7</sup> Luke Trainor, "Convenient Conflict? From Federal Defence to Federation," in Stephen Badsey, ed., *The Boer War: Army, Nation and Empire* (Canberra: Australian Army, 1999), 6. Also see Neville Meaney, "A Proposition of the Highest Importance: Alfred Deakin's Pacific Agreement Proposal and its Significance for Australian-Imperial Relations," *Journal of Commonwealth Political Studies* Vol 5, No.3 (1967), Ruth Megaw, "Australia and the Great White Fleet, 1908," *Journal of the Royal Australian Historical Society* Vol. 65, No. 2 (June 1970).

<sup>8</sup> Lyndon B. Johnson Presidential Library (LBJ), National Security Files, Country File Canada Box 166, "The United States Role in South Vietnam", 1965, 1 and 8. Also see A. Broinowski, *Howard's War* (Carlton North: Scribe Publications, 2003), A. Broinowski, *Allied and Addicted* (Carlton North: Scribe Publications, 2007), D. Phillips, *Ambivalent Allies: Myth and Reality in the Australian-American Relationship* (Ringwood, VIC: Penguin, 1988), E. Paul, *Little America: Australia, the 51<sup>st</sup> State* (Ann Arbor MI: Pluto Press, 2006), D. McLean, "From British Colony to American Satellite? Australia and the USA during the Cold War" *Australian Journal of Politics and History*, Vol 52 (2006): 64–79, C. Bell, *Dependent Ally: A Study in Australian Foreign Policy*.

Advisor McGeorge Bundy referring to the Australians as ‘trigger happy’,<sup>9</sup> but supporting Australia’s main geostrategic imperative was certainly one of the main reasons for its involvement in Vietnam.<sup>10</sup> Australia was one of the few allies that went to war against Al Qaeda and the Taliban in Afghanistan in 2001, and also into Iraq in 2003. It did so in pursuit of its own interests, one of which has been ensuring the US views it as an essential ally.<sup>11</sup>

While Australia has considered a variant of this policy in its region, one involving increasing ties to Asia to limit the effect of close ties with the US, this strategy has risks that seem to outweigh the benefits. An Asian, in particular China, demand for Australian raw materials, from iron ore and other industrial minerals to food, has resulted in much of Australia’s economic prosperity.<sup>12</sup> But any further alignment with Asian powers hostile to US interests will carry risks as long as the world’s sea-lanes are under the control of the US, especially if that Asian power is facing an uncertain future as its economy slows down. Australian goods can be sold in many of the world’s markets, but to reach them requires secure maritime routes the Australians are not able to ensure on their own. This reality will continue to force Australia to seek close relations with the US, including strengthening economic relations to balance their risks if their main Asian markets dry up. In military terms, for the foreseeable future Australia will continue its long tradition of involvement in US wars with valuable capabilities, while developing and maintaining a force structure to handle (albeit with key enabling capabilities provided by the US) regional contingencies. One can see the effects of this tradition embedded in Australian policy guidance, military strategy, and capability development.

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<sup>9</sup> G. Woodard, *Asian Alternatives: Australia’s Decision and Lessons on Going to War* (Melbourne: Melbourne University Press, 2004), 96.

<sup>10</sup> For a refutation of the argument that Australia was a pliant US ally in the Vietnam and Iraq wars see Lloyd Cox and Brendon O’Connor, “Australia, the US, and the Vietnam and Iraq Wars: ‘Hound Dog, not Lapdog’” *Australian Journal of Political Science*, Vol. 47 No. 2 (June 2012), 173–187.

<sup>11</sup> Not all authors agree with this logic behind this policy stance, and some have called for more independence from the US. See “Mark Beeson, “Australia’s Relationship with the United States: The Case for Greater Independence,” *Australian Journal of Political Science*, Vol. 38 No. 3 (November 2003).

<sup>12</sup> Peter Jennings, “The U.S. Rebalance to the Asia-Pacific: An Australian Perspective” *Asia Policy*, No.15 (January 2013), 40; Jingdong Yuan, *A rising power looks down under: Chinese perspectives on Australia* (Barton ACT: The Australian Strategic Policy Institute, 2014), 6.

### 3 Australian policy guidance and strategic thinking

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Recently, some prominent scholars have argued that the US has long suffered from a serious strategy deficit that comes from the imprecise and lazy way the term ‘strategy’ is understood and used.<sup>13</sup> Typically, strategy is conflated with policy to a point where it has been “robbed of its meaning, and left...only with banalities.”<sup>14</sup> If this theory is true, the ‘strategy deficit’ is something shared by many Western nations. For example, the United Kingdom (UK) Foreign and Commonwealth Office recently developed a strategy “for policy, public service delivery and organisational priorities.”<sup>15</sup> Instead of policy goals serving as the target for the development of a strategy, it was suggested that the strategy resulted in policy goals. This is a common trend whereby strategy is frequently used to describe a desired end-state, further confusing ways, means, and ends. Former President Bush, in a speech at the International Institute for Strategic Studies, argued that in confronting tyranny the US would pursue “a forward strategy of freedom” in the Middle East.<sup>16</sup> The nebulous policy goal of freedom in the Middle East might be something towards which a strategy can be developed, but it would be a condition or desired end-state towards which the strategy is aimed, and not a strategy itself. Clear political decision-making leading to relevant policy upon which coherent strategy can be based has been the crucial element in the success or failure of preparing for and conducting military operations.

In order to avoid the ‘strategy deficit’ a nation requires both a statement of its strategic rationale for its policy goals, a clear statement of its level of ambition in that regard, and a strategy (or strategies) that aligns resources to the desired end-state. When military strategies are not in harmony with government policy, or when government policy is developed in isolation of service perspectives and capability, the results can be disastrous.<sup>17</sup> Ideally, with rational civil-military relations the head of state sets out policy goals, and the nation’s military synchronise the means by which it is achieved. This process “– a process called strategy – is iterative, a dialogue where ends also reflect means, and where the result – also called strategy – is a compromise between the ends of policy and the military means available to implement it.”<sup>18</sup> Thus, as has always been the case, the clear articulation of sound and attainable political goals is the essential first step to the formulation of effective national and military strategies.<sup>19</sup>

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<sup>13</sup> Colin S. Gray, “The Airpower Advantage in Future Warfare: The Need for Strategy,” *Airpower Research Institute Papers Research Paper 2007-2* (Maxwell AFB Alabama: Airpower Research Institute, 2007), vii and 14. This sentiment is echoed by Hew Strachan in *The Direction of War: Contemporary Strategy in Historical Perspective* (New York: Cambridge University Press, 2014).

<sup>14</sup> Hew Strachan, “The Lost Meaning of Strategy,” *Survival*, Vol. 47 No. 3 (October 2005), 37.

<sup>15</sup> *Ibid.*, 33.

<sup>16</sup> International Institute for Strategic Studies, “19 November 2003 – President Bush Delivers IISS Address,” 19 November 2003, accessed 1 April 2015,

<http://www.iiss.org/en/publications/survival/sections/2005-9d59/survival--global-politics-and-strategy-autumn-2005-a44a/47-3-02-strachan-4f87>.

<sup>17</sup> Robin Higham and Stephen J. Harris, *Why Air Forces Fail: The Anatomy of Defeat* (Lexington KT: The University Press of Kentucky, 2006), 348.

<sup>18</sup> Hew Strachan, “The Lost Meaning of Strategy,” *Survival*, Vol. 47 No. 3 (October 2005), 52. Also see Hew Strachan *The Direction of War: Contemporary Strategy in Historical Perspective* (New York: Cambridge University Press, 2014).

<sup>19</sup> Eliot A. Cohen, *Supreme Command: Soldiers, Statesmen, and Leadership in War* (New York: The Free Press, 2002); Edward N. Luttwak, *Strategy: The Logic of War and Peace*, revised ed. (Cambridge, MA:

Recently, the Australians have improved their approach to these matters, and in many ways seem more advanced than other Western nations in their understanding of the difference between policy goals and the strategies needed to realise them. A certain degree of caution is needed regarding the finality and comprehensiveness of publicly issued policy documents, since the author only has access to the public version of these documents and it is possible that the specifics are contained in classified versions. This would be in keeping with the long history of classifying one's strategy at the highest level "for the excellent reason that it is generally unwise to reveal one's strategy in all its particulars to the other side."<sup>20</sup> Moreover, these public policy documents always contain an element of politics, and thus are not the final and only word on government policy. That being said, they are important indicators of government orientation and willingness to undertake the requisite funding and resource allocation, and are often widely used in the development of subordinate strategies and plans.

In late 2012, the Australian government issued its plan to shape its national future. The *Australia in the Asian Century* White Paper is more than a national security policy, although it admits correctly that national security is a key feature of the 'national future' the plan seeks to craft.<sup>21</sup> It expresses the Government of Australia's over-arching grand policy goals for the foreseeable future, and thus provides guidance to the subordinate parts. For example, the Australian government claimed it would follow this grand policy statement with a National Security statement articulating its priorities, and upon which a national security strategy could be developed.<sup>22</sup> In 2013 it issued its first-ever *National Security Strategy* (NSS) which both describes national security objectives and outlines the ways in which it will act to continue its advantage and attain those objectives.<sup>23</sup> Interestingly, and quite appropriately, this NSS is issued by the Prime Minister and Cabinet, instead of being delegated to a subordinate department.<sup>24</sup> This may seem a trivial matter, but it is fundamental in terms of ensuring Prime Ministerial responsibility for certain essential matters like national security. Despite a bit more overlap between policy 'ends' and strategy 'ways' than the purist might wish, it seems as though the demands of Australia's dynamic 'neighbourhood' has forced more of a pragmatic focus to the formulation of policy goals and supporting strategies than is typical amongst even its closest allies.<sup>25</sup>

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The Belknap Press of Harvard University Press, 2001); Harry R. Yarger, *Strategic Theory for the 21st Century: The Little Book on Big Strategy* (Carlisle, PA: Strategic Studies Institute, US Army War College, February 2006); Colin Gray, *Irregular Enemies and the Essence of Strategy: Can the American Way of War Adapt?* (Carlisle, PA: Strategic Studies Institute, US Army War College, March 2006), 31–32; Colin Gray, *Fighting Talk: Forty Maxims on War, Peace, and Strategy* (Westport, CT: Praeger Security International, 2007).

<sup>20</sup> Andrew F. Krepinevich and Barry Watts, *Regaining Strategic Competence* (Washington: Center for Strategic and Budgetary Assessments, 2009), 13.

<sup>21</sup> Government of Australia, *Australia in the Asian Century White Paper* (Canberra ACT: Department of the Prime Minister and Cabinet, 2012), 230.

<sup>22</sup> *Ibid.*

<sup>23</sup> Government of Australia, *Strong and Secure: A Strategy for Australia's National Security* (Canberra ACT: Department of the Prime Minister and Cabinet, 2012), ii.

<sup>24</sup> The Canadian National Security Policy was owned by Public Safety Canada and focused mainly on domestic issues. See Brad Gladman and Peter Archambault, "A Role for Effects-Based Planning in a National Security Framework" *Journal of Military and Strategic Studies* Volume 13, Issue 2 (Winter 2011), 23.

<sup>25</sup> *Ibid.*, also see Brad Gladman, *The future of allied air power: The United States Air Force* (Ottawa: DRDC-RDDC-2014-R82, 2014).

This is not to say that all is perfect with the Australian National Security architecture or with the degree to which its defence White Papers provide the level of guidance required to make force structure and institutional decisions within the Australian Defence Force (ADF) and Department of Defence. Since 2000, the government of Australia has issued three defence White Papers, and is about to deliver a fourth later in 2015. While frequently Western military planning is hampered by a lack of policy guidance, having too frequent and inconsistent guidance is equally challenging. With that said, the framework of strategic objectives has been broadly consistent, but with an important recent change in emphasis. In each White Paper since 2000 a framework of five strategic objectives has been postulated: the “defence of Australia; security and stability of the Southwest Pacific and East Timor, including the absence of bases of hostile powers in that region; security and stability of Southeast Asia; security and stability of the wider, now ‘Indo-Pacific’ Asian system; and global security.”<sup>26</sup> Both the 2009 and 2013 White Papers continued to use this basic framework to describe Australia’s interests and policy objectives, but it is the change to long-standing assumptions and lack of specific guidance in more recent White Papers that is of interest.

In its 2009 White Paper, exact expectations were set that included the requirement for the Australian Army to be able to deploy and sustain one brigade group and a battalion group to a different operating area on concurrent operations.<sup>27</sup> The 2013 White Paper, by contrast, omitted any reference to force levels and thus failed to provide the needed level of government ambition for its armed forces.<sup>28</sup> Moreover, some scholars have argued that the 2013 White Paper abandoned the long tradition of the ADF relying on the ‘Defence of Australia’ (DoA), which since the 1960s had been used to determine the types of capabilities constituting the Australian armed forces, and the concept of self-reliance as its strategic essence.<sup>29</sup> This concept sought an ADF that could defeat or deter credible attacks against the country and which could act within its region to secure Australian interests without combat assistance from its allies; it was through this main focus that ADF force structure was then discussed. Whether the concept of DoA was ever realistic against an adversary with the capability and intention to occupy an isolated and difficult to invade country is a question that has relevance in the region today. But Australia’s dynamic region has required the ADF to develop capabilities suitable for domestic defence and limited power projection and operations within its region. The most obvious example is its leadership of the multi-national International Force East Timor mission in response to East Timor’s vote for independence from Indonesia in 1999. It is, however, important to note that even in those operations it relied on the US for key enabling capabilities.<sup>30</sup> Still, the change in emphasis in its latest White Paper is significant for the ADF and RAAF force structure.

The 2013 White Paper’s reference to Australia’s defence policy being founded “on the principle of self-reliance in deterring or defeating armed attacks on Australia, within the context of our Alliance with the United States and our cooperation with regional partners”, explicitly saying

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<sup>26</sup> Stephan Frühling, “The 2013 Defence White Paper: Strategic Guidance Without Strategy” *Security Challenges*, Vol. 9, No 2 (2013), 43.

<sup>27</sup> Government of Australia, *Defending Australia in the Asia-Pacific Century: Force 2030* (Canberra ACT: Department of Defence, 2009), 88.

<sup>28</sup> Stephan Frühling, “The 2013 Defence White Paper: Strategic Guidance Without Strategy”, 44.

<sup>29</sup> *Ibid.*

<sup>30</sup> James Cotton, “Australia’s East Timor Experience: Military Lessons and Security Dilemmas”, accessed 15 April 2015, [http://www.nids.go.jp/english/event/symposium/pdf/2002/sympo\\_e2002\\_10.pdf](http://www.nids.go.jp/english/event/symposium/pdf/2002/sympo_e2002_10.pdf).

Australia would expect assistance from allies if Australia were attacked.<sup>31</sup> This is a significant change from a traditional Cold War approach to managing regional conflict to an acknowledgement of a changing strategic environment within the Southwest Pacific and the shifting reality of Australia's geographical and operational priorities. It is a change that, in the context of the US 'rebalance' to this region, aligns with the Australian geostrategic imperative of maintaining the support of the dominant air and naval power. Yet as always that support carries a cost that influences Australian defence planning, capability investment, and concept development. How the Australians, and in particular the RAAF, handle this geostrategic imperative and the US in particular is of particular value to Canada and the RCAF.

The 2015 Defence White Paper was to have been delivered in March of this year, but that date has been pushed back to later in 2015. This White Paper is being designed to reflect the Australian Government's broader strategic and fiscal priorities, and will "align defence policy with military strategy and deliver an affordable Australian Defence Force structure."<sup>32</sup> Underpinning this White Paper have been the recommendations made in the First Principles Review, which called for a departmental restructure to reduce waste (including the reduction of the thick layers of middle and senior management) and simplify processes, and a forthcoming fully-costed Force Structure Review.<sup>33</sup> In preparing the 2015 White Paper, a comprehensive consultation process sought input from across the Australian Government, along with that from industry, the Australian public, and its key allies and regional partners.<sup>34</sup> It will be interesting to see the degree to which the 2013 White Paper's departure from past practice in terms of its definition of self-reliance will be maintained with a new government and a new defence White Paper. Even if it is, the Australians are not likely to abandon the geostrategic imperatives outlined earlier. Indeed, these have been consistently pursued longer than DoA, even if they are not normally acknowledged overtly.

### 3.1 First principles review

Like many Western defence departments affected by the 2008 economic crisis, the Australian Department of Defence has conducted its latest in a series of defence reviews, some twenty of those reviews occurring between 2008 and 2011.<sup>35</sup> The *First Principles Review: Creating One Defence* report was released recently and identifies clearly and concisely the problem for which it was constituted—"The current organisational model and processes are complicated, slow and inefficient in an environment which requires simplicity, greater agility and timely delivery.

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<sup>31</sup> Government of Australia, *Defence White Paper 2013: Defending Australia and its National Interests*, (Canberra ACT: Department of Defence, 2013), 28.

<sup>32</sup> Government of Australia, "2015 Defence White Paper", accessed 4 May 2015, <http://www.defence.gov.au/whitepaper/>.

<sup>33</sup> Phillip Thomson, "Public service jobs to be cut after Defence first principles review" *The Canberra Times*, 1 April 2015, accessed 4 May 2015, <http://www.canberratimes.com.au/national/public-service/public-service-jobs-to-be-cut-after-defence-first-principles-review-20150401-1mcjnq.html>.

<sup>34</sup> "2015 Defence White Paper".

<sup>35</sup> Andrew Davies, Peter Jennings, and Mark Thomson, "One Defence: one direction? The First Principles Review of Defence" (Barton ACT: *Australian Strategic Policy Institute*, 2015), 2.

Waste, inefficiency and rework are palpable.”<sup>36</sup> Moreover, the report argues that the Department of Defence:

is suffering from a proliferation of structures, processes and systems with unclear accountabilities. These in turn cause institutionalised waste, delayed decisions, flawed execution, duplication, a change-resistant bureaucracy, over-escalation of issues for decision and low engagement levels amongst employees.<sup>37</sup>

The report makes six key recommendations, and notably the review panel will form an Oversight Board “to monitor implementation, provide regular reports to the government, and assist Defence in making annual progress reports to the government.”<sup>38</sup> The six recommendations include the establishment of a strong strategic centre to “strengthen accountability and top level decision-making”; establishing “a single end-to-end capability development function within the Department” to deliver military capability effectively and efficiently; develop an enterprise approach to corporate and military enabling services to maximise their effectiveness and efficiency; ensure “committed people with the right skills are in appropriate jobs to create the **One Defence** workforce”; manage staff resources to deliver optimal use of funds; and to commence implementation immediately with a view to completion in two years.<sup>39</sup> Along with these are seventy more specific recommendations that include untangling the civilian and military halves of the department into two parts (see Figure 1) with “a mostly civilian part reporting to the Secretary of the Defence Department, and a mostly military part reporting to the Chief of the Defence Force (CDF).”<sup>40</sup> These changes are important as the RAAF moves to fifth-generation technologies because the cost of those technologies and capabilities will require the careful balancing of effectiveness with budgetary efficiency the new structure promises to deliver. Moreover, the adaptation of new technologies to meet the challenges of a rapidly evolving security environment necessitates timely delivery of upgraded platforms to deliver effective capabilities—something the current system fails to do. Finally, and perhaps most importantly, the effective application and utility of air power is powerfully situational, obliging the development of a clear strategy for its employment. The creation of a strong, strategic centre offers the possibility that the Australians will do away with the previously discussed “strategy deficit” or at least mitigate it to some degree. Whether this will actually happen in practice remains to be seen, but structure does matter in these instances. With the development of hopefully clear strategic direction from the centre, the services can develop supporting strategies, concepts, and plans to attain those goals.

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<sup>36</sup> Government of Australia, *First Principles Review: Creating One Defence* (Canberra ACT: Department of Defence, 2015), 13.

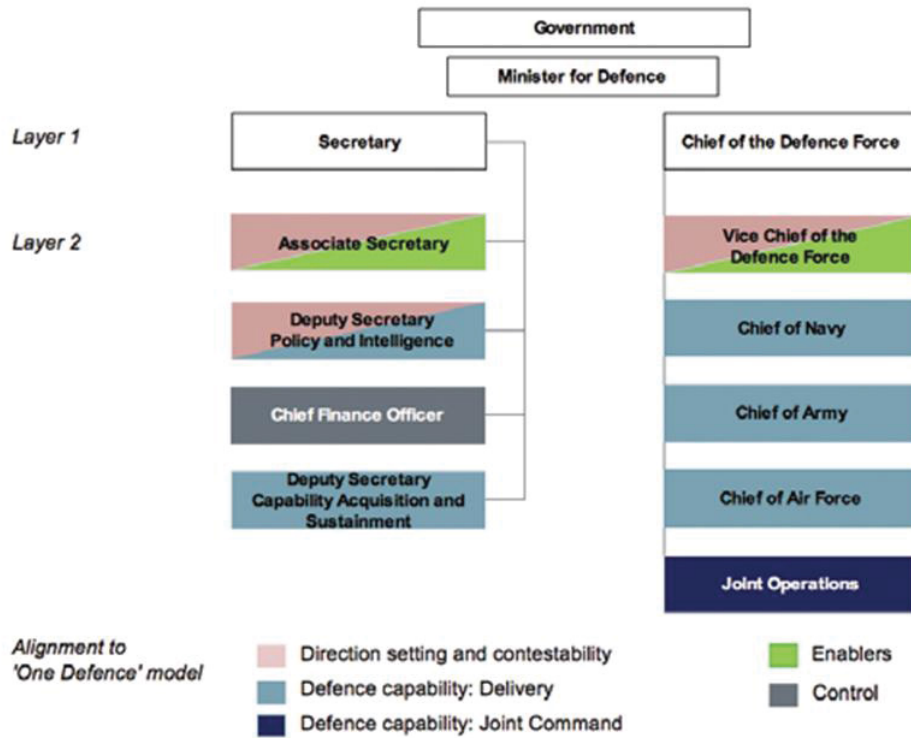
<sup>37</sup> *Ibid.*

<sup>38</sup> Andrew Davies, *et al.*, “One Defence: one direction? The First Principles Review of Defence”, 3.

<sup>39</sup> *First Principles Review: Creating One Defence*, 7. Emphasis in original.

<sup>40</sup> Andrew Davies, *et al.*, “One Defence: one direction? The First Principles Review of Defence”, 3.





**Figure 1: Proposed Layer 1 and 2 Organisational Chart**

Source: Government of Australia. *First Principles Review: Creating One Defence*. Canberra ACT: Department of Defence, 2015, 22.

## 4 RAAF capability implications

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As mentioned earlier, part of the price for maintaining the positive economic benefits of a close relationship with the US is a requirement to develop and maintain capabilities, doctrine, and operational methods that are seamlessly interoperable with the US armed forces. Doing so requires a serious and continual commitment of resources, something made more difficult with defence technologies which have always evolved quickly. This is something familiar in the Canadian context. For example, in late 1951, Minister of National Defence Brooke Claxton expressed concern about the growing costs and short lifespan of modern weapons, likening it to Alice in Wonderland where “it takes all the running you can do to keep in the same place.”<sup>41</sup> While it is easy to overstate the degree to which technology change can render defence capabilities irrelevant, as platforms with some flexibility to adopt new technologies and rapid concept development can mitigate this effect somewhat, defining a role useful to the US across the spectrum of potential operations while still maintaining those needed for domestic defence is particularly challenging. Moreover, domestic political considerations and the need to maintain trade relations with potential regional adversaries influence the degree to which a nation’s armed forces can be seen to be cooperating too closely with the US. In this regard, the experiences of Australia and Canada are broadly similar.

The main pillar of US strategic thinking at the moment concerns its approach to adversaries who have begun to exploit the proliferation of technology, and are applying it in clever ways to erode those US and allied advantages. In particular, the China’s People’s Liberation Army (PLA), Russia’s resurgence in its periphery, and to a far lesser extent Iran’s military and Islamic Revolutionary Guards Corps (IRGC) have exploited technologies and the features of their regions to pose challenging operational problems for any attempt at US and allied power-projection. The result has been the development of strategies designed to deny or limit US military access to the Western Pacific, key areas of Russia’s near-abroad, and the Persian Gulf, or to make the costs of maintaining access prohibitively expensive.<sup>42</sup> These Anti-Access and Area-Denial (A2/AD) strategies present the US with the unenviable strategic choice of losing access to areas vital to its own interests to adversaries, or developing the means to counter these strategies through concept development and investments in required capabilities at a time of declining defence budgets.<sup>43</sup> The US has chosen the latter course, and while the specifics of its developing Joint Concept for Access and Maneuver in the Global Commons (JAM-GC, but until recently Air-Sea Battle) concept are classified for good reason, the general approach and some potential implications for Australia and the RAAF can be examined in the context of the Southwest Pacific theatre and with China as the potential adversary.

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<sup>41</sup> James Eayrs, *In Defence of Canada: Growing Up Allied, Vol. 4* (Toronto: University of Toronto Press, 1980), 208–9.

<sup>42</sup> Andrew Krepinevich, “Why AirSea Battle?” (Washington DC: Center for Strategic and Budgetary Assessments, 2010), vii–viii.

<sup>43</sup> Anti-Access is defined as “Action intended to slow deployment of friendly forces into a theater or cause forces to operate from distances farther from the locus of conflict than they would otherwise prefer. A2 affects *movement* to a theater.” Area-Denial is defined as “Action intended to impede friendly operations within areas where an adversary cannot or will not prevent access. AD affects *maneuver within* a theater.” Air-Sea Battle Office, “Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges” (Washington DC, May 2013), 2.

As Benjamin Shreer of the Australian Strategic Policy Institute has written the “biggest questions about AirSea Battle [JAM-GC] are strategic”.<sup>44</sup> First, when developed fully the concept will lead to doctrine guiding US operations in contested maritime zones in the Pacific and elsewhere that may strengthen US conventional deterrence efforts, and thus contribute to regional stability. In other words, by showing resolve and a plan to counter A2/AD strategies, the US would reassure its allies and give its adversaries pause. Yet, JAM-GC is designed for a conventional conflict between China, and other rivals posing an A2/AD challenge, and the US and its allies and has a focus on blinding the enemy through attacks on its command and control early in the campaign. In the case of China, whose command and control nodes are intertwined with its nuclear forces, this approach raises the spectre of nuclear escalation if Beijing perceives these attacks to be targeting its nuclear deterrent. It will be a challenge to define a role for Australia that on the one hand supports the US as its key ally and yet refrains from sending a strong political message to Beijing that Australia is actively planning for a war with the PLA. So far, some scholars have argued, “fully embracing the logic behind AirSea Battle [JAM-GC] or developing specific military capabilities to underpin the concept’s implementation are so far not in Australia’s interests.”<sup>45</sup> With that said, the Australians have invested heavily in defence, something brought about by their dynamic region and need to demonstrate to the US their reliability as an essential ally and capable military partner, and will support US efforts against an increasingly assertive China in order to satisfy their own geostrategic imperatives.

The options for this support include the provision of ‘strategic depth’ for the US by allowing the US military access to Australian bases. The recent decision to host US Marines, ultimately to become a Marine Corps Air-Ground Task Force, at an ADF base near the northern Australian city of Darwin may be supplemented with plans to host US naval vessels. The Chief of Naval Operations, Admiral Jonathan Greenert, recently pointed to the plan to deploy roughly sixty percent of US naval forces to the region by 2020, and that the US is “doing a study together with the Australian Defence Force to see what might be feasible for naval cooperation in and around Australia, which might include basing ships”.<sup>46</sup> An option for a major upgrade to the Royal Australian Navy’s Fleet Base West (HMAS Stirling) to host US carrier strike groups is being considered, as is the use of Cocos Island airfields for US strike aircraft.<sup>47</sup> Moreover, recently acquired RAAF capabilities and plans for their use will fit well into evolving US JAM-GC planning, relieving the Australian government of having to embrace the concept officially while still pursuing its geostrategic imperatives.<sup>48</sup>

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<sup>44</sup> Benjamin Shreer, *Strategy: Planning the unthinkable war, ‘Air Sea Battle’ and its implications for Australia* (Barton ACT: Australian Strategic Policy Institute, April 2013), 6.

<sup>45</sup> *Ibid.*, 7.

<sup>46</sup> Lance M. Bacon, “CNO says ship basing in Australia under consideration”, *Navy Times*, 14 February 2015, accessed 20 May 2015, <http://www.navytimes.com/story/military/2015/02/14/australia-basing-looked-at-cno-confirms/23344415/>; Jason Scott and David Tweed, “U.S. Navy Considers Setting Up Ship Base in Australia”, *Blomberg Business*, accessed 20 May 2015, <http://www.bloomberg.com/news/articles/2015-02-10/u-s-considering-basing-navy-ships-in-australia-greenert-says-i5yxouxp>.

<sup>47</sup> “Fleet Base West”, accessed 21 May 2015, <http://www.navy.gov.au/establishments/fleet-base-west>; Benjamin Shreer, *Strategy: Planning the unthinkable war, ‘Air Sea Battle’ and its implications for Australia*, 7.

<sup>48</sup> It is important to note that with the adoption of RAAF capabilities comes a focus on the enabling technologies and a commitment for institutional reforms necessary to get the most out of them. Combining

## 4.1 RAAF strike capability

The retirement of the General Dynamics F-111 in 2010 created a serious airborne strike gap for the RAAF until the arrival of the F-35A Lightning II. The F-111 had served Australia as a strike aircraft since 1973, with four of the 24 aircraft being equipped with reconnaissance pods in 1979.<sup>49</sup> It was determined that the capabilities this platform provided could not be sacrificed while awaiting the appearance of the F-35A. In order to fill this gap the RAAF has acquired 24 F/A-18F Block II Super Hornets as an interim measure.<sup>50</sup> A surprise to some, the aircraft began arriving ahead of schedule and the programme proceeded very smoothly, something attributed to the close cooperation between the RAAF, the Australian Defence Material organisation, the USN and Boeing.<sup>51</sup> While this aircraft is not a fifth-generation fighter, in that they are not as low-observable as the F-35A or the F-22, it has benefitted from an enormous amount of US research and development to reduce its radar signatures.<sup>52</sup> The aircraft has been improved through efforts to reduce its visibility to radar through the close alignment of control surfaces and “the use of radar scattering techniques.”<sup>53</sup> It also differs from older generation F-18S through its AN/APG-79 Active Electronically Scanned Array (AESA) radar, which is able to perform air-to-air and air-to-surface tasks simultaneously, including the detection, classification, and tracking of multiple targets and provides guidance to the aircraft’s impressive array of beyond visual range air-to-air missiles and strike weapons. Moreover, its ability to collect and distribute information seamlessly to other platforms is proving “to be invaluable as a true force multiplier.”<sup>54</sup> The two-seat F/A-18F adds a second crewman for the advanced attack station cockpit to assist in strike roles, further adding to the aircraft’s flexibility and responsiveness.

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these considerable changes into a new conception for air operations is being undertaken in the RAAF Plan Jericho, discussed later.

<sup>49</sup> “General Dynamics F-111 Aardvark/Pig” *Pacific Aviation Museum* (11 September 2013), accessed 24 September 2015, <http://www.pacificaviationmuseum.org/pearl-harbor-blog/general-dynamics-f-111-aardvark-pig>.

<sup>50</sup> “Australia’s 2<sup>nd</sup> Fighter Fleet: Super Hornets & Growlers,” *Defence Industry Daily* (11 August 2014), accessed 26 May 2015, <http://www.defenseindustrydaily.com/australia-to-buy-24-super-hornets-as-interim-gapfiller-to-jsf-02898/>.

<sup>51</sup> Kym Bergmann, “Super-duper Hornets,” *Asia-Pacific Defence Reporter* (1 February 2012), accessed 24 September 2015, <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?sid=6e1046b4-03fb-45df-be49-97583a8ab4b0%40sessionmgr4003&vid=0&hid=4201>.

<sup>52</sup> The notion of aircraft generations appeared in the 1990s to make sense of the improvements in jet fighter aircraft through advances in aircraft design, avionics and weapon systems. The term ‘fifth-generation’ was first applied to the US F-22 Raptor, introduced in 2005 and featuring low observability or stealth technologies and advanced software to provide greater survivability, lethality, and decision superiority over an adversary. The term is normally afforded to fighter generations, but is being applied to aircraft with those key attributes and to air forces that acquire and effectively integrate those technologies. It will be so used in this paper. See “Five Generations of Jet Fighter Aircraft” *Pathfinder: Air Power Development Centre Bulletin* Issue 170 (January 2012), 2.

<sup>53</sup> Kym Bergmann, “Super-duper Hornets.”

<sup>54</sup> “Boeing Completes Delivery of RAAF Super Hornets Ahead of Schedule,” *PR Newswire* (21 October 2011), accessed 24 September 2015, <http://web.a.ebscohost.com/ehost/detail/detail?sid=72ec1c8e-4f51-4bfl-9f56-89a04db3fc4b%40sessionmgr4003&vid=0&hid=4201&bdata=JnNpdGU9ZWVhc3QtbGl2ZQ%3d%3d#A N=201110210029PR.NEWS.USPR.CG90995&db=bwh>.

Illustrating the value of the close strategic relationship Australia has with the US, it is important to note that Australia is the first country outside the US to receive the AN/APG-79 AESA radar. Moreover, in May of 2015 the US State Department approved the sale of equipment, parts, and logistical support for Australia's Super Hornet and EA-18G Growler aircraft.<sup>55</sup> According to the US Defense Security Cooperation Agency (DSCA), the sustainment efforts include include:

software and hardware updates, Engineering Change Proposals, System Configuration upgrades, system integration and testing, engine component improvement, tools and test equipment, spare and repair parts, support equipment, publications and technical documentation, personnel training and training equipment, aircrew trainer devices upgrades, U.S. Government and contractor technical assistance, and other related elements of logistics and program support.<sup>56</sup>

This sale of follow-on sustainment and support will ensure both the reliability of the RAAF F/A-18F fleet, and ensure its advanced interoperability with the US in particular, but also with other allied air forces against capable adversaries.

Like most allied air forces, the RAAF has invested heavily in precision munitions. The AGM 158 Joint Air to Surface Standoff Missile (JASSM) and AGM 154C Joint Standoff Weapon (JSOW) are two examples of its latest generation of precision munitions. These weapons reduce the risk to strike platforms against sophisticated enemy air defences by enabling them “to hold at risk a range of regional targets across [the] strategic environment from an extended stand off [sic] range.”<sup>57</sup> These weapons are an essential element in countering the growing anti-access area denial challenge in the Southwest Pacific region, and in the ability of fourth and fifth generation strike aircraft to deliver precise air effects from longer ranges.

## 4.2 Fifth-generation fighter

The Australian government has committed to the acquisition of 72 F-35A Lightning II aircraft beginning in 2018, and with Full Operational Capability (FOC) by 2023. They also have left the door open to a fourth squadron bringing the possible total to 100 F-35A aircraft. The F-35A and other fifth-generation aircraft now entering service with the USAF and other allied (and soon adversary) air forces represent something new entirely and are far more than just the next step in a linear evolution of airframes—stealthy replacements for obsolescent platforms. The capabilities offered by fifth-generation fighters, and more importantly how those capabilities are integrated into a networked joint force, are so far-reaching that considerable change will be required both within the RAAF and across the ADF to use them to their full potential.

The F-35A will demand a considerable evolution in the concept of future air operations, since the advanced technology of fifth-generation fighters will blur the distinctions between strike, air

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<sup>55</sup> Franz-Stefan Gady, “Australia to Upgrade Its Fleet of Fighter Jets,” *The Diplomat* (5 May 2015), accessed 24 September 2015, <http://thediplomat.com/2015/05/australia-to-upgrade-its-fleet-of-fighter-jets/>.

<sup>56</sup> *Ibid.*

<sup>57</sup> Geoff Brown, “The Royal Australian Air Force Observes and Strikes Things from the, Moves Things Through the, and Controls the Air,” *Military Technology* (February 2013), 99.

control, and support functions.<sup>58</sup> Moreover, it will force the creation of new ideas on how to command, employ and enable air power without equating tactics and strategy, as the latter largely determines air power's effect.<sup>59</sup> The result is expected to be a fully capable, distributed approach to air operations with fifth-generation aircraft serving as battle-management assets coordinating strike and defence operations as well as drawing on naval, air and land assets, all of which will require significant institutional change across ADF. The Australians know this, and are beginning to transform the ADF and the RAAF in particular through Plan Jericho (discussed later), to maximise the potential of this next generation fighter.

### 4.3 Force Level Electronic Warfare (FLEW) capability

In an interesting and forward thinking decision, the Australian government spent an additional \$31 million US dollars to have 12 of its 24 F/A-18F Super Hornets equipped to be converted to the EA-18G 'Growler' Airborne Electronic Attack (AEA) aircraft.<sup>60</sup> This move is part of an effort to establish a 'Force Level Electronic Warfare Capability' for the ADF that will leverage the ADF's experience with operating and supporting the Super Hornet fleet, and is expected to reach Initial Operational Capability (IOC) in 2018.<sup>61</sup> The EA-18G Growler electronic warfare version removes the internal gun, adds electronics to help the aircraft detect and jam enemy radars, aided by four specialised Electronic Countermeasures pods under the wings.<sup>62</sup> But the electronic warfare capability provided by these aircraft goes beyond simply jamming radars. The "Growler's spectrum goes right down into the [communications] bands and it has significant capability in the communication space."<sup>63</sup> This electronic warfare capability will enable the RAAF to disrupt or jam a range of military electronics systems, including communications systems and radars. It "will improve situational awareness and protect [Australian] forces by providing the ability to deny or disrupt an adversary's use of the electromagnetic spectrum and hence, their electronic

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<sup>58</sup> Robbin F. Laird, "A 21<sup>st</sup>-century Concept of Air and Military Operations," *Defense Horizons* No. 66, (March 2009), 1.

<sup>59</sup> Dr. Brad Gladman, "Is the RCAF Ready to Become a Fifth-Generation Enabled Air Force?" *RCAF InForm* Issue 12 (October 2015); Colin S. Gray, "The Airpower Advantage in Future Warfare: The Need for Strategy," *Airpower Research Institute Papers Research Paper 2007-2* (Maxwell AFB Alabama: Airpower Research Institute, 2007).

<sup>60</sup> Marina Maleric, "Half of Australian Super Hornet Buy Wired for Growler Conversion," *Defense Daily*, accessed 26 May 2015, [http://web.b.ebscohost.com/ehost/detail/detail?sid=f79a43af-0ba3-4cb1-ac8f-9fd6d5accaa0%40sessionmgr114&vid=0&hid=105&bdata=JnNpdGU9ZWVhc3QtbGl2ZQ%3d%3d#db=ts\\_h&AN=43672687](http://web.b.ebscohost.com/ehost/detail/detail?sid=f79a43af-0ba3-4cb1-ac8f-9fd6d5accaa0%40sessionmgr114&vid=0&hid=105&bdata=JnNpdGU9ZWVhc3QtbGl2ZQ%3d%3d#db=ts_h&AN=43672687); also see Christopher Bolkcom, "Navy F/A-18E/F Super Hornet and EA-18G Growler Aircraft: Background and Issues for Congress," (Washington DC: Congressional Research Service, 2008), CRS-7.

<sup>61</sup> Royal Australian Air Force, "EA-18G Growler," accessed 26 May 2015, [https://www.airforce.gov.au/Technology/Future\\_Acquisitions/EA18G\\_Growler/?RAAF-wWtm2RqFW2K0Pyup3hIjncFVFKb02OLN](https://www.airforce.gov.au/Technology/Future_Acquisitions/EA18G_Growler/?RAAF-wWtm2RqFW2K0Pyup3hIjncFVFKb02OLN). The term Force Level Electronic Warfare is a term used by the RAAF to denote the significant effects the EA-18G Growler provides across the battlespace. It has evolved beyond a local self-protection effect of older Electronic Warfare systems, now creating effects that will create confusion in the enemy's command and control system. See Group Captain Glen Braz, "The EA-18G 'Growler': Force Level Electronic Warfare (FLEW) in the ADF," accessed 23 June 2015, <http://airpower.airforce.gov.au/Publications/Details/592/The-EA-18G-Growler-Force-Level-Electronic-Warfare-in-the-ADF.aspx>.

<sup>62</sup> Franz-Stefan Gady, "Australia to Upgrade Its Fleet of Fighter Jets."

<sup>63</sup> Royal Australian Air Force, "EA-18G Growler".

systems.”<sup>64</sup> This will provide a valuable capability for operations in advanced A2/AD environments.

#### 4.4 Airborne Early Warning and Control (AEW&C) capability

One of the more complex defence acquisitions, one fraught with controversy and delay, has been the acquisition of six E-7A ‘Wedgetail’ aircraft. These platforms, which deliver a highly advanced AEW&C and air battlespace management capability, are one of the most advanced pieces of technology in the Australian Defence Force. Indeed, the RAAF has received some very positive feedback on the capabilities the aircraft delivers. In particular, during a recent Red Flag exercise in 2012, not only did the aircraft achieve 100% mission availability, but according to an F-22 squadron commander it “provided the best controlling he had ever seen.”<sup>65</sup> The E-7A can gather information from numerous sources, analyse and distribute it to other air and surface assets—once the technical issues surrounding the Link 16 system were addressed. It can thus control the tactical battlespace by providing direction for fighter aircraft, land and maritime assets, as well as tankers and intelligence platforms.<sup>66</sup> Based on a 737-700 commercial airliner, the E-7A has an advanced multi-role electronically scanned array and other sensors that gather information displayed on ten mission crew consoles able to track airborne and maritime targets simultaneously.<sup>67</sup>

The military developments in the Asia-Pacific region currently are on a scale that rivaled “the Warsaw Pact’s spending during the last decades of the Cold War.”<sup>68</sup> Much of this investment is being put into naval and air capabilities, focusing on offensive striking power through fighter aircraft, smart weapons, and a range of cruise and ballistic missiles. Australian interests are directly threatened by the development and deployment of Chinese and Russian systems to major nations in the region. In particular, parts of Australia’s north and northwest are key to its mineral, metal and energy industries, and much of that area is underpopulated. These industries and “the shipping lanes required to support them represent a significant and recently developed strategic vulnerability for Australia.”<sup>69</sup> It is less the risk of invasion and more the threats posed to economic infrastructure and shipping where these Chinese and Russian systems pose the greatest threat. The mere possibility of an air or cruise missile attack normally results in the diversion of shipping traffic, or the closure of shipping lanes or ports at great economic loss.<sup>70</sup> From a domestic operations perspective, the E-7A ‘Wedgetail’ allows effective radar coverage to fill gaps over northern Australia, as well as providing a very effective asset useful to US JAM-GC. Its radar provides “superior capability against low altitude [sic] targets, compared to the E-3 AWACS.”<sup>71</sup>

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<sup>64</sup> *Ibid.*

<sup>65</sup> Kym Bergmann, “Wedgetail,” *Asia-Pacific Defence Reporter* (8 April 2013), accessed 28 September 2015, <http://www.asiapacificdefencereporter.com/articles/298/Wedgetail>.

<sup>66</sup> Royal Australian Air Force, “E-7A Wedgetail”, accessed 26 May 2015, <https://www.airforce.gov.au/Technology/Aircraft/B737-Wedgetail/?RAAF-yFLAkgbpvuhRf7dG5J3kHi1Q4caywtso>.

<sup>67</sup> *Ibid.*

<sup>68</sup> Carlo Kopp, “Wedgetail: Australia’s eagle-eyed sentinel,” (Canberra: Australian Strategic Policy Institute, 2006), 8.

<sup>69</sup> *Ibid.*, 9.

<sup>70</sup> *Ibid.*, 10.

<sup>71</sup> *Ibid.*, 11.

Wedgetail is thus a vital capability for the ADF in pursuing its geostrategic imperatives of surveillance and control across Australia's north, and "the Wedgetail is the only credible AEW&C system available which can deal with the developing strategic environment."<sup>72</sup> It also offers a valued capability to the developing ideas surrounding US JAM-GC in this region, something useful in ensuring continuing US support.

## 4.5 Aerial refueling

Few would doubt the importance of aerial refueling to the speed and reach of air power.<sup>73</sup> The ability to refuel bombers, fighters, transport aircraft deploying and sustaining ground forces, and ISR assets enables the rapid reach of air power but also ground power. At a recent conference on Operation Unified Protector, the North Atlantic Treaty Organisation (NATO) operation in Libya, former Supreme Allied Commander Europe (SACEUR) US Admiral James Stavridis pointed to the importance of tankers to the projection US and NATO air power, and that their development and increased fielding should be a priority for NATO nations.<sup>74</sup> In a future A2/AD conflict against an adversary keen on preventing US military power from operating from bases in the Southwest Pacific theatre, the value of not only Australian bases but also the aerial refueling capability becomes all the more apparent. In particular, against a scenario involving China the long distances across the Pacific and heavily defended airspace around China and the Strait of Taiwan will demand extremely long reach, precise stand-off engagement, and the heavy use of tankers. For these reasons, and for the practical air defence of the Australian continent and country, the RAAF has a definite requirement for an aerial refueling capability. In response, it has begun the adoption of the KC-30A Multi-Role Tanker Transport (MRTT), a heavily modified Airbus A330 airliner. The RAAF originally selected this aircraft in 2005, expecting the four aircraft to have been delivered by 2010. Program delays of close to two years did not prevent the Australian government from acquiring an additional aircraft and recently announcing the purchase of two additional aircraft, bringing the total for the RAAF to seven.<sup>75</sup>

The KC-30 MRTT will be able to transfer more than 100 tonnes of fuel to all of the RAAF's (and those of the USAF and USN) major existing and anticipated platforms using both a 'fly-by-wire' boom and two 'hose-and-drogue' refueling systems, the latter to refuel probe-equipped aircraft. These aircraft will be networked using Link 16 real-time data-links, and will be equipped with military communications and navigation suites as well as an electronic warfare self-protection

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<sup>72</sup> *Ibid.*, 14.

<sup>73</sup> See Jay Wertz, "Filling Stations in the Sky", *Aviation History* Vol. 19, Issue 5 (May 2009); Rebecca Grant, "Playing With Fire," *Air Force Magazine* Vol. 92, Issue 7 (July 2009); Reina J. Pennington, "Tankers: Never loved until they're needed", *Air & Space* (October/November 1997); Rebecca Grant, "9 Secrets of the Tanker War," *IRIS Independent Research* (September 2010), accessed 28 July 2015, <http://www.irisresearch.com/library/resources/documents/9SecretsoftheTankerWar.pdf>.

<sup>74</sup> The author was in the audience at the June 2012 Learning from Air Operations in Libya conference at the US Naval War College Rhode Island, where Adm Stavridis repeatedly identified a lack of tankers as a major deficit in the NATO force structure. The presence of Canadian Polaris and Hercules tankers also was noted as being of particular value to the success of the operation.

<sup>75</sup> Gerard Frawley, "RAAF to acquire two additional KC-30s," *Australian Aviation* (1 July 2015), accessed 25 September 2015, <http://australianaviation.com.au/2015/07/raaf-to-acquire-two-additional-kc-30s/>.



system for protection against surface-to-air missiles.<sup>76</sup> Again, this refueling capability is necessary for a country the size of Australia, and for a dynamic region where force projection at short notice is often required. It has the added benefit of being a valued capability central to developing ideas surrounding US JAM-GC in this region.

## 4.6 Tactical transport

In response to its need for intra-theatre transport, the RAAF has recently acquired the C-27J Spartan aircraft to supplement its C-130J Hercules. The C-27J Spartan is set to achieve IOC in December 2016 with FOC in 2017, and in addition to its transportation abilities it will serve as a useful network node. In keeping with RAAF Plan Jericho to integrate the RAAF for the information age (discussed later) both the new C-27J, the C-130J Hercules tactical transport that entered service in 1999, and the C-17 Globemaster III, are (or will be) equipped with a new dynamic re-tasking satellite communications capability, Link-16 real-time data-links, and beyond line-of-sight radio communications.<sup>77</sup> These systems will enhance the speed and flexibility already inherent in air power, something of value to the concept of air operations developing in the US JAM-GC concept.

## 4.7 Maritime patrol and anti-submarine capability

In February 2014, the Australian Government announced the acquisition of eight P-8A Poseidon maritime patrol aircraft, with an option to purchase an additional four following the forthcoming Defence White Paper review.<sup>78</sup> Similar to the 'Wedgetail', the Poseidon is based on the Boeing 737-800, a proven and reliable commercial design that will enable the aircraft "to remain on station conducting low level Anti-Submarine Warfare missions for over four hours at a range of more than 1,200 nautical miles (2,200 km) from base."<sup>79</sup> The P-8A can be refueled from the KC-30A, which will increase its endurance to over twenty hours enabling it to patrol Australia's isolated Southern Ocean territories. Its advanced systems include "an advanced multi-mode radar, a high definition electro-optic camera, an acoustic system (that has four times the processing capacity of the current AP-3C Orion's system) and an advanced electronic support system that is a derivative of the system fitted to the EA-18G Growler."<sup>80</sup> Its eleven weapon hard points with digital weapon interfaces (six external and five in an internal bomb bay) will carry up to 10,000 kilograms (22,000 pounds) of weapons. The aircraft has an extensive communication suite of ten separate radios and data-links across the radio and satellite communication spectrums, enabling it to acquire, process and transmit data from its sensors to other so-equipped aircraft and eventually to land and naval systems.<sup>81</sup> For a country the size of Australia, and especially in the

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<sup>76</sup> Royal Australian Air Force, "KC-30A Multi Role Tanker Transport, accessed 26 May 2015, <https://www.airforce.gov.au/Technology/Aircraft/KC-30A/?RAAF-mqV0dY4RK4Yc3QG06xtPhhp7asTRVUyC>.

<sup>77</sup> Andrew McLaughlin, "Analysis: RAAF's transport capabilities in transition" *Flightglobal*, 19 February 2015, accessed 3 June 2015, <http://www.flightglobal.com/news/articles/analysis-raaf39s-transport-capabilities-in-transition-408683/>.

<sup>78</sup> Royal Australian Air Force, "P-8A Poseidon", accessed 3 June 2015, <http://www.airforce.gov.au/Boeing-P8-A-Poseidon/?RAAF-Z4PUOpGXH/eLtWmc6qxYI9xYycb+rKng>.

<sup>79</sup> *Ibid.*

<sup>80</sup> *Ibid.*

<sup>81</sup> *Ibid.*

context of a rapidly improving fleet of Chinese diesel-electric and nuclear powered submarines posing a significant threat to US carrier battle groups and commercial shipping, this capability serves both domestic defence imperatives as well as providing a capability of direct value to the US rebalance to the Pacific theatre and its evolving JAM-GC concept.<sup>82</sup>

## 4.8 Intelligence, Surveillance, and Reconnaissance (ISR)

Throughout the history of air power, the speed and flexibility of aircraft have made them ideal platforms to deliver ISR. While not their primary role, it was not uncommon for fighters or bombers to provide valuable and near real-time information on enemy movements and the location of potential targets.<sup>83</sup> Recently, that ability has expanded to aircraft of all types to the point where ISR is now provided in most air forces by multiple aircraft, including bomber, fighter, airlift, tanker, and dedicated ISR types. The RAAF is no exception, and is seeking to network these aircraft more effectively to maximise this potential, but it does possess a number of dedicated aircraft that deliver much of its airborne ISR capability. Some of them have already been described above—the AP-3C Orion, P-8A Poseidon, and E-7A Wedgetail—but the RAAF also has two new Unmanned Aircraft Systems (UAS) to enhance this capability.<sup>84</sup> The Heron UAS is a medium-altitude long-endurance which can conduct single missions in excess of twenty-four hours at altitudes up to 10,000 metres.<sup>85</sup> It was employed by the Canadian military in Afghanistan to good effect.<sup>86</sup> This UAS has been recently supplemented by a commitment by the Australian government to acquire up to seven Northrop Grumman MQ-4C Triton maritime surveillance High Altitude Long Endurance (HALE) UAS.<sup>87</sup> This jet powered long-endurance UAS will bring a capable sensor package and an operational radius of 2,000 nautical miles that will enhance RAAF ISR throughout its northern approaches.<sup>88</sup> This capability is also of value to the US JAM-GC concept in countering powerful Chinese A2/AD defences in the Pacific theatre.

Taken together with its existing platforms, these planned capabilities and the focus on the enabling technologies needed for more effective integration will make the RAAF one of the world's most modern and balanced air forces. These capabilities would allow it to provide airborne electronic warfare assets like its EA-18G 'Growler', airborne early warning and control using its existing E-7A 'Wedgetail' aircraft, and an advanced (and very valuable from a US perspective) multi-role aerial refueling and transport aircraft the KC-30A.<sup>89</sup> Its advanced strike

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<sup>82</sup> Andrew Krepinevich, *Why AirSea Battle?*, 19.

<sup>83</sup> Brad Gladman, *Intelligence and Anglo-American Air Support in World War Two: The Western Desert and Tunisia, 1940-43* (London: Palgrave Macmillan, 2009).

<sup>84</sup> The term UAS refers to the Unmanned Aerial Vehicle and the entire system that supports the aircraft, including the ground control station, communications, maintenance, logistics, and information analysis.

<sup>85</sup> "Heron/Machatz 1 Unmanned Aerial Vehicle (UAV), Israel," *Air Force Technology*, accessed 5 October 2015, <http://www.airforce-technology.com/projects/heron-uav/>.

<sup>86</sup> Canadian Forces Aerospace Warfare Centre, *Project Laminar Strike: Canada's Air Force Post Op Athena* (Trenton: CFAWC Production, 2011), 51.

<sup>87</sup> Gareth Jennings, "Avalon 2015: Australia seeks co-operative development with US on Triton UAV," *HIS Jane's Defence Weekly*, 25 February 2015, accessed 5 October 2015,

<http://www.janes.com/article/49422/avalon-2015-australia-seeks-co-operative-development-with-us-on-triton-uav>.

<sup>88</sup> Kym Bergmann, "RAAF Fleet Set To Expand," *Asia-Pacific Defence Reporter*, 1 September 2015.

<sup>89</sup> Royal Australian Air Force – Technology, accessed 20 May 2015,

<http://www.airforce.gov.au/Technology/Aircraft/?RAAF-nMfLhE/ppITHEkch5e7PfopYCzwKfhNg>.

aircraft, including the F/A-18F Super Hornet and the F-35A Lightning II stealth fighter, combined with its ISR platforms are particularly useful to US strategy in the region. The AP-3C Orion Maritime Patrol aircraft will be replaced by the P-8A Poseidon, and with the capability provided by the ‘Wedgetail’, the Heron and MQ-4C Triton UAS, its ability to provide continual ISR coverage will be substantially increased. These capabilities will be of direct value to US and its evolving JAM-GC concept, if the RAAF can define a politically acceptable and militarily meaningful role for these aircraft in support of the dominant naval and air power. Ensuring the RAAF is able to do so requires an acknowledgement that the mere possession of fifth-generation aircraft and technologies does not guarantee a fifth-generation enabled air force.

## 4.9 RAAF Future Air and Space Operating Concept (FASOC)

Leading the articulation of the RAAF future direction for the employment of these capabilities is its Future Air and Space Operating Concept (FASOC). The RAAF has recently updated this document, the last was written in 2007, but has yet to release it officially. From its predecessor, it is possible to infer that its purpose will be to articulate future roles, methods, and missions to inform the longer-term development of air and space capabilities. The aim of the FASOC likely will be, *inter alia*, a shared understanding, harmonised with joint and other service operating concepts, within the strategic planning community of the way the RAAF might conduct operations in support of national policy goals.<sup>90</sup> It will seek to guide the RAAF as it transforms into an air force designed to fight and win in the information age. Key to success will be leveraging the professional mastery of its people, something that, with secure and resilient networks, will enable timely decision-making.<sup>91</sup> From there, the right effects will be delivered by new and legacy capabilities through agile and adaptive air operations. Those air operations include the core air power roles of control of the air, strike, ISR, and air mobility, but the RAAF will also explore the force level electronic warfare role.<sup>92</sup> It also likely will explore some means to enhance and secure its access to space-based systems and the advantages they provide against adversaries capable of targeting them.<sup>93</sup> With the document not yet released, the specifics of how this broad plan will be achieved have been left to the recently announced Plan Jericho.

## 4.10 Plan Jericho

As discussed earlier, the Australians have realised that buying fifth-generation fighters does not make a fifth-generation enabled air force.<sup>94</sup> In other words, a considerable amount of institutional

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<sup>90</sup> Government of Australia, *The Strategy Framework 2010* (Canberra: Department of Defence, 2010), 79.

<sup>91</sup> Government of Australia, *Australian Air Publication AAP 1000-F: The Future Air and Space Operating Concept* (Canberra ACT: Air Force Headquarters, 2007), 8.

<sup>92</sup> Group Captain Glen Braz, “The EA-18G ‘Growler’: Force Level Electronic Warfare (FLEW) in the ADF.”

<sup>93</sup> See Wing Commander Stephen B. Cook, “A Potential Policy for Australian Military Space” (Maxwell AFB: School of Advanced Air and Space Studies, 2007), 36–45.

<sup>94</sup> Previously, the reference to generations of aircraft was reserved for fighters. The capabilities that the next generation fighter (commonly known as fifth-generation) brings are wide-ranging. Its introduction will blur the distinctions between air power roles, and will require a new concept for air and joint operations. In this regard, the term ‘generation’ referring to fighter aircraft perhaps has outlived its usefulness. One can see this in more recent publications by the RAAF (see Plan Jericho reference) use the terms fifth-generation technologies, fifth-generation fighter, and fifth-generation enabled air force almost interchangeably.

change is needed to make use of the capabilities provided by fifth-generation platforms such as the F-35A Lightning II, ‘Wedgetail’, Poseidon, and MQ-4C Triton. To merely adopt such platforms into existing RAAF structures would mean that only roughly forty percent of the platforms true capability would be realised.<sup>95</sup> Whether ‘forty percent’ is an accurate number is not the issue. Rather, and this is of particular relevance to Canada and the RCAF as it moves towards the adoption of next or fifth-generation capabilities, it is the acknowledgement that significant changes are needed to the RAAF as an institution in order to harness the potential of fifth-generation capabilities. The RAAF’s recently announced Plan Jericho is the first step in that direction, and this plan’s goals are in line with the intent of the new Chief of Air Force, Air Marshal Leo Davies.<sup>96</sup>

According to RAAF literature, “Plan Jericho will transform the Air Force into a fifth-generation enabled force that is capable of fighting and winning in 2025.”<sup>97</sup> Its specific vision is to “develop a future force that is agile and adaptive, fully immersed in the information age, and truly joint.”<sup>98</sup> In order to get the most out of the P-8A Poseidon, EA-18G Growler, F-35A Lightning II, MQ-4C Triton, and the new surveillance and space systems due to enter service shortly the capacity of the RAAF’s “organisation and support systems to collect, process, distribute and protect data must match those of [its] major platforms.”<sup>99</sup> Moreover, as discussed earlier existing aircraft and other platforms are also being upgraded with new technologies to keep pace with the plan.

Plan Jericho has three interrelated themes. The first is to harness the combat potential of an integrated force. The term ‘integrated’ has come to mean many different things, but the RAAF and ADF have sought to break down the obstacles to internal integration within the RAAF as well as with the Australian army and navy, and also with key allies like the US. The USAF is referring to the need to shape a sensor-shooter concept of operations that creates a sustainable ‘combat cloud’ that connects all elements of the USAF with other combat assets.<sup>100</sup> To Plan Jericho, integration means a networked force where operators and commanders “at all levels will need to exploit the full capabilities of each system in the force, and not operate in isolation.”<sup>101</sup> For example, the introduction of the EA-18G Growler AEA capability represents a substantial increase in the FLEW capability of the ADF, but only if that platform is properly integrated into all aspects of how the ADF fights. In order to do so for all legacy and new platforms, and to make effective use of the future force capabilities, organisational structures, concepts of operations, and collective training must evolve. In addition to its emphasis on “enhanced command and control, information sharing and decision superiority”, modifications to the training systems are being explored focusing on simulation and experimentation in a live, virtual and constructive environment across platforms and services.<sup>102</sup>

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<sup>95</sup> This comment was made by Dr. Sanu Kainikara from the RAAF Air Power Development Centre during a presentation to the Canadian Forces Aerospace Warfare Centre on 7 November 2014.

<sup>96</sup> Air Marshal Leo Davies, “Commander’s Intent” accessed 15 September 2015, <http://airpower.airforce.gov.au/Publications/Latest/Latest-Publications.aspx>.

<sup>97</sup> Royal Australian Air Force, “Plan Jericho”, accessed 25 May 2015, <http://www.airforce.gov.au/docs/Plan-Jericho-Booklet.pdf>, 3.

<sup>98</sup> *Ibid.*, 2.

<sup>99</sup> *Ibid.*, 3.

<sup>100</sup> “The Coming of the F-35: The Services and Partners Get Ready for the Next Phase of 21<sup>st</sup> Century Air Combat” (Second Line of Defense, 2015), 10.

<sup>101</sup> “Plan Jericho”, 4.

<sup>102</sup> *Ibid.*

Plan Jericho's second theme is the development of an innovative and empowered workforce, both military and civilian. The goal of an agile and adaptive air force requires personnel capable of excelling in the information environment. Thus, the way in which people are recruited, educated, have their careers managed and developed must evolve to empower and recognise innovation at all levels. Some measures already taken, for instance the review of the Air Intelligence workforce and the Maintenance Productivity Improvement Program, have resulted in positive changes along these lines, but more work is needed.<sup>103</sup> While most organisations acknowledge that their people are their top priority, Plan Jericho formally recognises that getting the most out of the new, and indeed the legacy, capabilities requires a serious commitment to significant change in handling personnel.

The final theme of Plan Jericho seeks to address a common issue amongst Western defence departments—the need to change the way capabilities are acquired and sustained. The RAAF intends to take advantage of spiral development programs to keep pace with rapidly evolving technology. Moreover, the RAAF has acknowledged that once capabilities are introduced they must be sustained so as to get the most of them across their operational life, and that more attention needs to be paid to the enabling capabilities.<sup>104</sup> Plan Jericho calls for the deliberate acquisition of air platforms, command and control, and information management systems “with a full regard for future operating concepts.”<sup>105</sup> One would expect this would necessitate adopting some flexibility into the platforms that deliver the capabilities to enable upgrades and the incorporation of new technologies to keep pace with challenges faced, but this worthy goal is something easier said than done. So too is equally worthy goal of changing the way capabilities are acquired.

Efforts along these lines have begun with the *First Principles Review* changes discussed earlier. In particular, the recommendation to establish “a single end-to-end capability development function within the Department to maximise the efficient, effective and professional delivery of military capability” carries with it some risk.<sup>106</sup> The issue at which this recommendation is aimed is that the current capability development construct has disconnected the operators from those involved in procurement. Moreover, the current system has multiple and, arguably, unnecessary handover points making for an overly cumbersome procurement process.<sup>107</sup> Part of the *First Principles Review* recommendation includes the disbanding of the Capability Development Group (CDG) and the Defence Material Organisation (DMO) and transferring their responsibilities to more appropriate areas or to a new organisation.<sup>108</sup> Given the ambitious plan to complete the reorganisation of the capability development function within the next two years, coupled with the forthcoming decisions associated with Plan Jericho's enabling capabilities and the acquisition of surface ships and submarines, many of the resulting proposals will be developed by new entities as they are being established.

Until recently, the CDG developed capability acquisition proposals on behalf of the services and sought government acquisition approval. Once granted, the project was transferred to the DMO

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<sup>103</sup> *Ibid.*, 7.

<sup>104</sup> *Ibid.*, 9.

<sup>105</sup> *Ibid.*

<sup>106</sup> *First Principles Review: Creating One Defence*, 7.

<sup>107</sup> ““Creating One Defence”: Australia's First Principles Review of Defence,” *Military Technology Special Issue* (2015), 360.

<sup>108</sup> This recommendation has not yet been accepted by the Australian government. See *Ibid.*

for execution. The “current (weak) contestability function and responsibility for seeking project approval from government [will] go to the new Policy and Intelligence Group” while the “requirement development function goes to the VCDF [Vice-Chief of the Defence Force] (for joint proposals) and the service chiefs (for land, sea and air proposals).”<sup>109</sup> While moving the contestability function for capability proposals back to the Policy and Intelligence Group is understandable, it is less clear how dividing the remainder of the CDG amongst the services will assist with program coordination or ensure the satisfaction of joint requirements and the development of the necessary enabling capabilities to network platforms and systems across the ADF, as called for in Plan Jericho. Some authors have been advised by defence department officials that “many of the staff slated in the review to move to the VCDF and the services will instead move to the Capability Acquisition and Sustainment Group” (CASG) (see Figure 1), but the final details have not yet been released.<sup>110</sup>

The creation of the CASG in the new ‘strategic centre’ is “the mirror opposite of what was recommended in the 1997 Defence Efficiency Review” when the Deputy Secretary for Acquisition was renamed and set on the path to becoming DMO. It remains to be seen whether the ability of DMO to push back on the services and defence industry regarding cost estimates and risk can be maintained in the new structure. Moreover, by taking on many of the duties formerly shouldered by four deputy secretaries in the DMO as well as the bulk of the work performed by CDG, CASG may be hard-pressed to deliver its mandate. In short, while there is logic behind the changes, the scale and scope of those changes and the ambitious timeline make it analogous to changing a tire on a truck while it is moving down the road. This is not an unknown or even unusual condition for defence departments and militaries, but it may add an additional complication to achieving Plan Jericho’s laudable goals.

#### 4.11 Defending geostrategic imperatives

According to its current Chief of Air Force the RAAF has, in the past, provided niche capabilities to alliance and coalition partners. With the introduction of the capabilities described above it is now “a balanced air force that can rapidly self-deploy integrated air task groups.”<sup>111</sup> The successful implementation of Plan Jericho and its FASOC will enable it to deploy more powerful air forces which will be seamlessly interoperable with the US forces, and which make a meaningful contribution to a JAM-GC scenario in the Pacific theatre or elsewhere in pursuit of Australian interests. While some authors have argued that a public endorsement of the US JAM-GC concept at the political level is problematical in that it risks a vital trade relationship with China, those same authors acknowledge that a “strong US military posture in Asia to provide deterrence and reassurance is in Australia’s strategic interest.”<sup>112</sup> Whether the concept is embraced publicly and politically is not the main issue. In order to maintain the support of the dominant naval and air power, all that matters is that the RAAF maintains an awareness of the concept’s development and ensures its doctrine is aligned with US doctrine once the concept has evolved to the point where writing doctrine is necessary. This will include the exploration of

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<sup>109</sup> Andrew Davies, *et al*, “One Defence: one direction?: The First Principles Review of Defence”, 23.

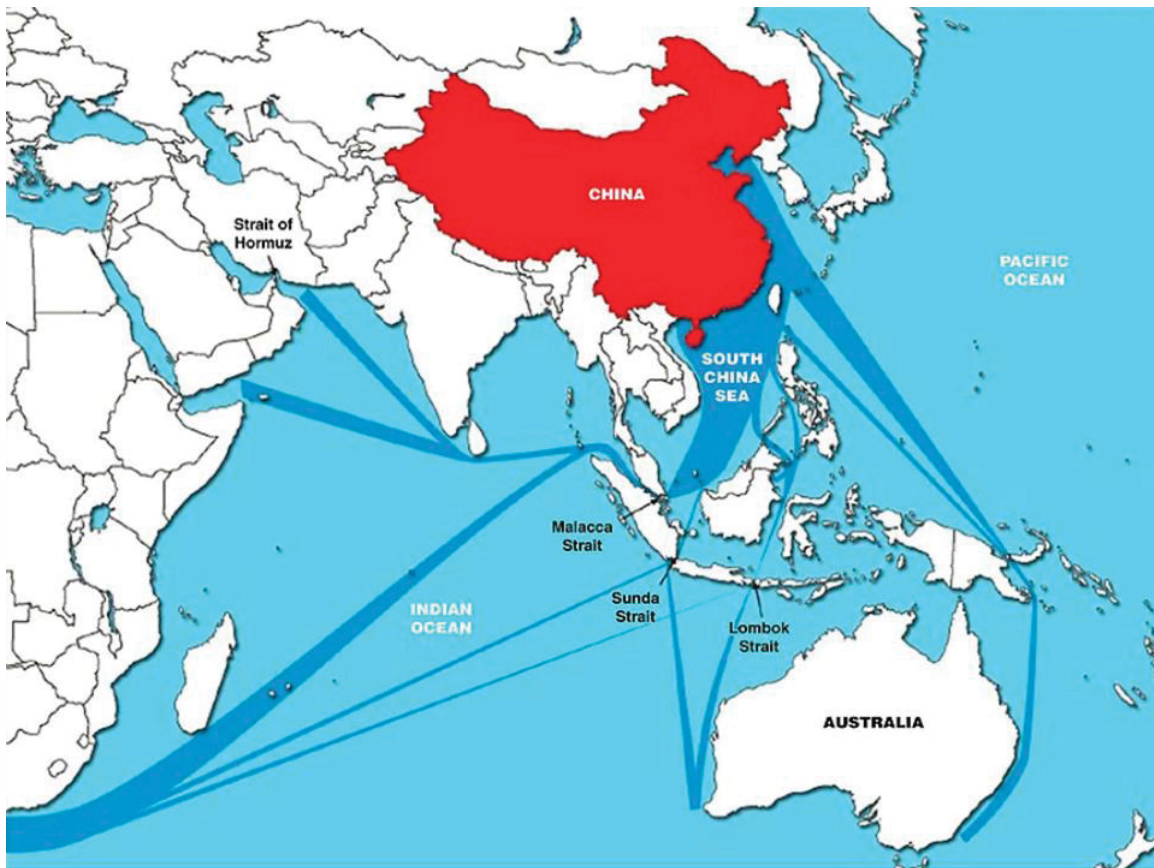
<sup>110</sup> *Ibid*.

<sup>111</sup> Air Marshal Leo Davies, “Commander’s Intent,” 4.

<sup>112</sup> Benjamin Schreer, *Planning the unthinkable war: ‘AirSea Battle’ and its implications for Australia* (Canberra: Australian Strategic Policy Institute, 2013), 36.

other ways to provide a meaningful role valued by the US, but also in support of Australia's regional interests. This approach is of direct relevance to RCAF concept and force development.

Australia's strategic location astride the Pacific and Indian oceans offers it the opportunity to participate in the so-called 'offshore control' operations, whereby the US and its allies deny China the use of the sea inside the first island chain primarily using attack submarines, mines and air strikes, forcing the PLA to fight at longer ranges by defending allied territories adjacent to the first island chain, and intercepting Chinese merchant and energy shipping in the Malacca, Sunda, and Lombok Straits and other maritime chokepoints.<sup>113</sup> This would play to the strengths of the USN and the USAF and their allies, and would provide a powerful deterrent to China in the near-term. But each of these actions likely would be considered by Beijing as an act of war. Thus, unless the strategic environment deteriorates the Australians are unlikely to adopt an overly provocative stance against China by a formal commitment to offshore control. But if the situation deteriorates the strong capabilities developed by the RAAF will be of immense value to the US in either deterring or engaging Chinese forces.



**Figure 2:** China's sea lines of communication

Source: Liao Kai, "The Australian Factor in the United States' Western Pacific Strategy," *Air & Space Power Journal International Feature* (March-April 2012), 40.

<sup>113</sup> T. X. Hammes, "Offshore Control: A Proposed Strategy for an Unlikely Conflict", *Strategic Forum* No. 278 (June 2012); Liao Kai, "The Australian Factor in the United States' Western Pacific Strategy," *Air & Space Power Journal International Feature* (March-April 2012), 39.

## 5 Conclusions

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This detailed analysis into Australian strategic thinking and the direction the RAAF is taking in terms of capability investment and concept development has implications for the Canadian policy development community, as well as for the RCAF and joint force development communities. That being said, the analysis at this stage is incomplete. Even a comprehensive understanding of the air force of a single Canadian ally is an insufficient base upon which to draw recommendations for Canadian policy and military force development. After all, while some authors have pointed to Canada and Australia being ‘strategic cousins’ the reality is that the two countries inhabit very different neighbourhoods, and only parts of the Australian experience and approach are directly relevant. It is for this reason that the larger study began with an analysis of the US and its air force, and all conclusions will emphasise developments with that most important ally.<sup>114</sup> However, given the seeming rediscovery of a traditional US foreign policy pattern of allowing allies to shoulder more of the defence burden, an understanding of the Australian approach to operations and its capability and concept development certainly is of significant value to Canadian efforts. Thus, this paper’s analysis has the potential to serve as a very useful resource for Canadian policy formulation, as well as joint and RCAF force development. Despite the analysis being incomplete, there are some preliminary and provisional recommendations which can be made.

The comprehensive understanding of the orientation of allies with whom Canada and the CAF likely will partner in deployed operations, in terms of how they view the world, their geostrategic imperatives, and their policy goals and strategies to attain them—will assist in setting the context around which to develop Canadian policies in line with desired outcomes and which align a national approach in areas and regions of interest. The Government of Canada has recently expressed its enduring interest in, for example, the Pacific region of the world. An understanding of how the Australians approach their region and the protection of their interests, as well as the management of their relationship with the US, is essential when developing a uniquely Canadian approach to these matters. It is equally important to defining a role for the Canadian military in any regional operation. It is thus recommended that the Canadian policy development community adopt this general approach to include a comprehensive understanding of Australian policy development and orientation, as well as the main thrusts in military concept development and capability investment. With that in mind, a structured dialogue with senior military leadership in Canada will assist in the formulation of relevant Canadian defence policy in the context of current and planned military capabilities, and in a full understanding of the capabilities needed to attain those policy goals.

In terms of military force development, a certain amount of caution is warranted in the methods selected to attempt to come to terms with unpredictable security environment, and with the uncertainty that brings. Some of the problems associated with that uncertainty can be alleviated to some degree through clear policy direction derived from a structured and candid dialogue between the military and political leadership. This analysis recommends that military advice should flow from an understanding of the future directions in warfare that are, in turn, informed by a comprehensive understanding of the capability investment and concept development course being charted by key allies. One might go so far as to suggest this approach is the only of the very

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<sup>114</sup> Gladman, *The future of allied air power: the United States Air Force*.



few small and medium-sized militaries should use, rather than such tools as the creation of alternative futures and the discussion of shocks or black swans that are impossible to predict.<sup>115</sup> Smaller militaries such as the CAF, and the RCAF in particular, do not have the resources required to ponder a future they cannot summon. It is therefore recommended that both the RCAF and joint capability and concept development communities use this analysis to construct realistic scenarios based on a comprehensive understanding of the regional threats faced and the main pillars of allied strategic thinking on how to confront them. The appreciation of the nature of future warfare so derived could thus serve in the crafting of attainable policy goals, military capability requirements, and in the mobilisation of resources towards these desired ends.

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<sup>115</sup> Brad Gladman and Michael Roi, *Look to the Future, Understand the Past: The Limitations of Alternative Futures Methodologies* (Ottawa: ORD Technical Report TR 2005/10, 2005); Gregory Smolyneec, Don Neill, Brad Gladman, Peter Archambault, Michael Roi, Charles Morrissey. *Defence Scientists' Reflections on CFD's Future Security Environment 2007–2030* (Ottawa: DRDC CORA TN 2008-01, 2008).

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## List of symbols/abbreviations/acronyms/initialisms

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A2/AD	Anti-Access/Area Denial
ADF	Australian Defence Force
AEA	Airborne Electronic Attack
AESA	Active Electronically Scanned Array
AEW&C	Airborne Early Warning and Control
ASW	Anti-Submarine Warfare
CAF	Canadian Armed Forces
CASG	Capability Acquisition and Sustainment Group
CD&E	Concept Development and Experimentation
CDF	Chief of the Defence Force
CDG	Capability Development Group
CFAWC	Canadian Forces Aerospace Warfare Centre
DMO	Defence Material Organisation
DND	Department of National Defence
DoA	Defence of Australia
DSCA	Defense Security Cooperation Agency
ECM	Electronic Countermeasures
FASOC	Future Air and Space Operating Concept
FLEW	Force-Level Electronic Warfare
FOC	Full Operational Capability
GoC	Government of Canada
HALE	High Altitude Long Endurance
HMAS	Her Majesty's Australian Ship
IOC	Initial Operational Capability
IRGC	Islamic Revolutionary Guards Corps
ISR	Intelligence, Surveillance, and Reconnaissance
JAM-GC	Joint Concept for Access and Maneuver in the Global Commons
JASSM	Joint Air to Surface Standoff Missile
JSOW	Joint Standoff Weapon
MRTT	Multi-Role Tanker Transport

NATO	North Atlantic Treaty Organisation
NORAD	North American Aerospace Defense Command
NSS	National Security Strategy
PLA	People's Liberation Army
PLAAF	People's Liberation Army Air Force
RAAF	Royal Australian Air Force
RCAF	Royal Canadian Air Force
SACEUR	Supreme Allied Commander Europe
SWPTO	Southwest Pacific Theatre of Operations
TPFDD	Time-Phased Force and Deployment Data
UAS	Unmanned Aircraft Systems
UK	United Kingdom
US	United States
USAF	United States Air Force
USN	United States Navy
VCDF	Vice-Chief of the Defence Force

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This Scientific Report is the second in a series of reports whose purpose is to inform discussions of capability and concept development within both the RCAF and CAF, as well as providing an important input into Canadian policy development. The methodology adopted begins with an analysis of the policy and supporting strategy framework of, in this case, Australia to develop an understanding of the direction being given to its military on the areas of the world and threats against which it is to prepare. On the basis of this understanding of the key tenets of Australian strategic thinking it is possible to identify those concepts and capabilities being developed to prepare the Royal Australian Air Force (RAAF) to meet those threats. The findings of this analysis are that Australia will, for its own geostrategic reasons, continue to develop the capabilities necessary to ensure it remains an indispensable ally to the world's dominant naval and air power. While at the political level a full embracing of the US Joint Concept for Access and Maneuver in the Global Commons (JAM-GC) may not be in Australia's interests, the capabilities it is now developing and its geography will make it an indispensable ally to US strategy in the Southwest Pacific. The institutional change those capabilities are forcing on the RAAF are an example of what the RCAF and CAF need to do to define a meaningful role for air and joint operations moving forward. Thus, this analysis of Australian experience could serve a range of functions within the Department of National Defence and the CAF, from focusing RCAF capability and concept development through to informing joint force and policy development.

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Le présent rapport scientifique est le deuxième d'une série de rapports qui ont pour but d'éclairer les discussions sur le développement de capacités et de concepts au sein de l'Aviation royale canadienne (ARC) et des Forces armées canadiennes (FAC) ainsi que de présenter des renseignements importants pour le développement de politiques canadiennes. La méthodologie adoptée a d'abord consisté à procéder dans le présent cas à une analyse de la politique et du cadre de la stratégie d'appui de l'Australie en vue d'acquérir une compréhension de l'orientation que ce pays donne à ses forces armées quant aux régions de la planète et aux menaces contre lesquelles elles doivent se préparer. En fonction de cette compréhension des principes clés de la pensée stratégique australienne, il est possible de cerner les concepts et les capacités développés en vue de préparer la Force aérienne royale australienne (RAAF) à faire face à ces menaces. Cette analyse permet de conclure que l'Australie continuera, pour ses propres raisons géostratégiques, de développer les capacités dont elle a besoin pour s'assurer de demeurer un allié indispensable de la puissance navale et aérienne dominante du monde. Bien que, du point de vue politique, l'Australie n'ait pas intérêt à épouser pleinement le Joint Concept for Access and Maneuver in the Global Commons (JAM-GC) des États-Unis, les capacités qu'elle est à développer et sa situation géographique en feront un allié indispensable des États-Unis pour ce qui est de leur stratégie dans le Sud-Ouest du Pacifique. Le changement institutionnel que ces capacités poussent la RAAF à adopter illustre les mesures que l'ARC et les FAC doivent prendre pour définir un rôle qui soit pertinent et permette aux opérations aériennes et interarmées d'aller de l'avant. Ainsi, l'analyse de l'expérience de l'Australie pourrait être utile dans le cadre d'un vaste éventail de fonctions au sein du ministère de la Défense nationale et des FAC, qu'il s'agisse d'orienter le développement des capacités et des

concepts de l'ARC, de guider le développement des forces interarmées ou d'éclairer l'élaboration des politiques.

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Capability Based Planning; Concept Development; Air Power; Royal Australian Air Force; RAAF; Air-Sea Battle; Joint Concept for Access and Maneuver in the Global Commons; JAM-GC; Wedgetail; Aerial Refueler; KC-30; F-35; Anti-Access; Area-Denial; Australian Defence Force; F/A-18F; Plan Jericho; First Principles Review; Royal Canadian Air Force; RCAF